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The CHEMIST

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AMERICAN INSTITUTE OF CHEMISTS

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SEARCHING CHEMICAL AND ALLIED LITERATURE

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The CHEMIST

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THE AMERICAN INSTITUTE OF CHEMISTS
HOWARD S. NEIMAN, *Secretary*
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EDITORIALS BY COUNCILORS—V

The Research Worker

By Colin W. Whittaker, F.A.I.C.

The Council Representative from the Washington Chapter discusses some qualities desirable in a research worker.

THE MAN who carries out the actual details of solving a scientific problem, the active research worker, must possess certain definite mental traits if he is to succeed. Let us examine some of these characteristics. We do not propose to deal here with purely technical matters such as how to search the literature or determine a melting point or with matters of education or training. The hypothetical man we propose to discuss is technically well founded and knows how to proceed.

The research worker must be studious and be interested in his science. New developments in science follow one another with great rapidity. Most of these will be in fields apart from the worker's own specialty but it is never safe to ignore them completely. By reading about these developments, especially the actual research papers on them, rather than popular or semi-popular news accounts, although the latter are sometimes very useful, the worker will subconsciously store up in his mind bits of technique and of theory that will surely sometime be of use in solving his own problems. It goes without saying that every research worker must intensively study previous work in his particular field of endeavor. There is a difference of opinion as to whether he should study the literature before or after he starts his own research, some scientists claiming that previous study results in preconceived ideas from which there is no escape and that it is better to start with a fresh mind. Be that as it may, the fact remains that sooner or later, especially if publi-

cation or patenting is intended, the research worker must thoroughly digest the writings of others on the subject of his inquiry. These two phases of study, the general cultural reading to "keep up" and the intensive study of specific works touching his own field, are very difficult for the man not genuinely interested in his science and enthusiastic about it.

Singleness of purpose is a valuable attribute. Research workers who earn their living by research always have a definite problem to solve, a problem handed them by an executive head or dictated by existing circumstances. In view of this, it is strange how many research men of all ages and degrees of experience are unable to keep a definite goal in view and drive straight toward it. Along the road to this goal many enticing by-roads appear that are very tempting. Sometimes these by-roads of science lead quickly to some minor goal, some bit of scientific truth that can be garnered in one's stride without undue expense or loss of time. Generally speaking, however, these side excursions greatly delay the main research, and the desire to follow them must be suppressed. The tougher the going on the main highway, the more apt one is to leave it, and it requires a great singleness of purpose to follow through and complete the job.

THE RESEARCH worker must be able to think and plan. This sounds trite and perhaps it is. Nevertheless this failure to think through to the end and to envision all phases of the problem causes more failures in research than any other one factor. Many very studious men who are deeply interested in science allow the thoughts of other scientists to flow into their minds continuously and easily, much as most of us read novels, but never really apply their own minds to the problem. Such men often become walking encyclopedias and are useful chaps to know, in fact, they are usually more valuable to others than to themselves. Most of us find it easier to go into the laboratory and spend a month finding out something that a day or two of hard thinking, perhaps with the aid of a few equations or phase rule diagrams, would have told us. This is perhaps true because most of us find laboratory work, if not too routine, pleasant and interesting, whereas real ratiocination requires genuine effort and is frequently not pleasant. Most of us tend to postpone the real job of thinking as long as possible. The research worker is, in reality an executive, dealing not so much with people as with facts and tools, making them work in orderly fashion according to his carefully thought out plan.

The worker who possesses a real patience will go farther in the end than he who tries to hurry things through. The research worker who plunges

into pilot plant construction without adequate laboratory study of his process is all too common. Such men are impatient of detail and believe that they can "cut through" all the effort and time required for careful investigation. They usually proceed to set up arbitrary conditions which they believe to approximate plant operation, conduct a few experiments in the laboratory under this fixed set of conditions, and if these experiments succeed, they plunge immediately into pilot or full-size plant construction. It is strange that the glaring faults in this method should need emphasizing, but even the most casual inspection of our recent industrial history will uncover many examples of such procedure. This impatience to get through often produces results of value to no one, since it would be a wise man indeed who could accurately visualize conditions in his projected "plant" which he has never seen. If he does happen to make a hit, he usually has a process that will fall a quick victim to some competitor who has studied the process more carefully and was, therefore, able to improve upon it or substitute something else for it. A nice judgment is required here. The complete solving of all problems and angles of any new process is an unattainable goal but patient research sufficient to acquire a broad understanding is essential to any lasting success.

Then there is that vexing problem of the man who cannot somehow judge the relative importance of things. A typical illustration of this is the man who insists on making his results precise to the fifth decimal place when uncontrolled factors in the experiment make all results beyond, say, one decimal, meaningless. We all dislike to discourage accuracy because we secretly admire it. Actually, however, this tendency is about the most *zeitraubend* of all the many failings of research workers. It is really part of the failure to "think through" and carefully plan. Many men become so enamored of precision that they spend a month making a thermostat accurate to 0.001° when one accurate to 1° could have been made in a day and would have served equally well. We do not mean to belittle accuracy and precision when collecting basic physical or chemical data, such work should be done with the utmost care, but, on the other hand, let us not use the technique of Richard's atomic weight determinations when determining, *e. g.*, the phosphorous content of a soil.

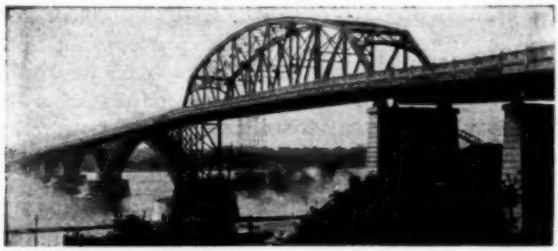
IT MAY SEEM odd to include in this discussion of traits of the successful research worker, an interest in mechanical arts. It is true that the modern highly organized research organization usually has complete mechanical service of all kinds available, including machine

work, instrument making, glass blowing and so on. Unfortunately the writer has known many workers who could scarcely turn a nut with a monkey wrench or bend a glass tube. Such men are helpless unless they have the continuous assistance of skilled workers. Usually they are the despair of their associates in that they monopolize shop time to perform the simplest tasks.

We have not tried to infer that the research worker to be successful must be a man of extraordinary talent or ability, but only that he must possess, in addition to thorough technical training, the ability to think straight and the tenacity to drive through to the final goal.

Annual Meeting Committee

THE following members of THE AMERICAN INSTITUTE OF CHEMISTS have been appointed a committee to make plans for the Annual Meeting which will be held May ninth and tenth at Buffalo, N. Y.: Groves H. Cartledge, Chairman; Howard W. Post and Lloyd Van Doren.



Peace Bridge, connecting Buffalo with Canada

Buffalo is ninth in industrial importance among the cities of the United States, but has the greatest hydro-electric power development in the world, producing eleven million horsepower a year. Its key industries are steel, lumber, grain and rubber.

Twenty-three miles from Buffalo is located Niagara Falls, most easily reached by crossing the new Peace Bridge near Buffalo to Fort Erie on the Canadian side of Niagara River and then following the beautiful Canadian Niagara Boulevard to the Falls. This route provides mag-

nificent views of the Niagara River, the Rapids, the Falls, the Gorge and the Whirlpool. It also provides the best views of the night illumination of the Falls.

New York Chapter Luncheons

The New York Chapter of THE AMERICAN INSTITUTE OF CHEMISTS announces that a Round Table luncheon will be held on the second Wednesday of each month at The Chemists' Club, 52 East 41st Street, New York, N. Y.

An opportunity is given Institute members, through this series of luncheons, to get together and become better acquainted, and to participate in informal discussion of matters of interest to THE AMERICAN INSTITUTE OF CHEMISTS.

Members and their guests, new members and members visiting from out-of-town are cordially invited to take part in these informal forums. At least one New York Chapter officer will be present at each luncheon to act as a reception committee. The first of these luncheons will be held March eleventh.

Position Wanted

Really urgent help is needed by widow (48) of college professor (analytical chemistry) large Eastern University. Intelligent and nice personality. Have you a clerical, library or reception room position to give her? Well qualified to act as house mother at school, housekeeper at fraternity house, or in congenial home.

Her funds are gone. Her age is against her for industrial work. Pride precludes charity. Please write Box 236, THE CHEMIST, 233 Broadway, New York, N. Y.

The American Institute of the City of New York announces the following programs: March 6th. General Meeting, 8:00 P. M., Auditorium, American Museum of Natural History. Speaker: Howard W. Haggard, Associate Professor Applied Physiology, Yale University, "Recent Discoveries in Biology and Medicine." March 10th: Round Table. Institute Meeting Room, 8:00 P. M. "The Comparative Study of Cultures and Our Present Crisis." Leaders: Robert T. Pollock, Consulting Engineer. Ruth Benedict, Department of Anthropology, Columbia University. March 17th: Round Table. Institute meeting Room 8:00 P. M. "Blood Tests as a Guide to Determining Parentage." Leaders: L. W. Famulener, Bacteriologist, St. Luke's Hospital. Alexander S. Wiener, Department of Laboratories, The Jewish Hospital of Brooklyn.

Searching Chemical and Allied Literature

By D. D. Berolzheimer, F.A.I.C.

In a talk given before the New York Chapter, a chemical literature expert discusses the procedure by which chemical and other technical literature is searched, and the qualifications necessary to do this successfully.

WHEREVER reference is here made to "literature," it is not restricted to chemical literature, but includes that on technology in general, engineering in all its branches, electricity, etc., as well as the patents in these fields.

Literature is produced by technologists to serve their fellow workers thruout the world. It is regrettable that the vast amount of literature available is not used nearly as much as it deserves, or as necessity actually would require.

Few technologists know how to use libraries and the material they contain. Women, as a rule, do not make good searchers of literature. I believe this is due to the fact that the technical experience of women is not as varied as that of men. Women usually take up only one branch of chemistry or technology and stick to that branch alone. The average man has been in three or four different kinds of work, and therefore, has a more varied background. A literature searcher to be successful is born, not made.

The primary requisite of the profession is the same as that of a good detective. One must know where to look for what one wants. One need not know so much of the chemistry of this and that, but one must know where to find what one is seeking and to know the libraries of the immediate city, of the neighboring region and of the country at large. Libraries are more or less specialized. For example, if some one comes to me with a list of references from the publications of some of the many small scientific societies, there is only one place to find it—Cornell University, because a former librarian there made it a matter of his personal hobby to collect these publications. He corresponded with scientific societies all over the world. Similarly, if one wants literature in the

coal-tar industry, he will find only two really good libraries, the Library of The Chemists' Club and that of the University of Wisconsin.

Referring to The Chemists' Club Library, I make mention of the library of the late Dr. Frederick Schniewind, who spent $12,000 for his books, plus $4,000 for the binding. After his death, his entire library was acquired for The Chemists' Club, with the result that in the field of coal-tar, gas, and allied subjects, we are better equipped than even the Engineering Societies' Library.

Literature searches may be made for various reasons. Perhaps a search is made to obtain general information on a subject; or a search may be made to obtain one definite piece of information about a subject. This latter search is the most difficult and usually the most unsuccessful. Recently a client wanted the heat of formation of molybdenum sulfide. He limited me to two or three hours without telling me that hours of search had already been put in on the subject. I did not find it either, for the simple reason that I do not believe it exists in the literature. In the search, the only molybdenum compounds I could find, of which the heat of formation had been determined, were the oxides. First I went to the "*Intentionally Cryptical Tables*," then I tried the *Dictionary of Applied Physics*, from that I went thru various books of tables. I covered the files of *Chemical Abstracts;* the *Journal of the Society of Chemical Industry;* the *Journal of Physical Chemistry;* the journals on physics, and the *Chemisches Zentralblatt*, supplementing the *International Critical Tables*, but I did not find it. It is probably not in the literature, because no one ever had to make molybdenum sulfide. It may never have been synthesized. When any one wanted the sulfide, they would use the natural product.

Another use of a search is when an individual or firm is going to undertake research and wants to know all that has been done on the particular project under way. This may be very voluminous, depending, of course, on the past popularity of the subject.

A search may be undertaken for the purpose of building up a patent application, or a client may need to find anticipations in existing patents, so as to prevent a new patent from infringing. The next search may be for infringements or anticipations. Patent searches may be and have been done as carefully and as extensively in New York as in Washington, altho patent attorneys think this can be done only in Washington. If a searcher knows where to go in New York, such a search can be successfully carried out here. One does not need the collections of patents in the Patent Office, which are usually not complete. Here, the New York Public Library has a complete collection of United States and British

patents, a partial set of German patents, and a set of French patents, as good and no more incomplete than the collection at Washington.

The first consideration before starting a search is not how much money is going to be spent, nor how much time you want to devote to the search, but how much time is the subject of the search actually worth. Let us assume that we put in ten hours on a certain search, and in those ten hours we get ninety per cent of the material which exists. To find the missing ten per cent will probably take ten or twenty hours more. Then ask, "Is the work worth putting in these extra hours?" This is the primary thing to settle. Would the results attendant upon completeness be worth while? Partial completeness might give the person having the search made all the information he needs.

One of the difficulties for most people in making searches is that they cannot read all the various languages. Literature should be read, wherever possible, in its original language. The late John C. Pennie, one of the leading patent attorneys of his time, who was particularly successful in the petroleum field, won many cases in that industry because he could go to the original sources of the petroleum literature in Russian. In Russia they cracked petroleum in connection with the manufacture of oil gas, thirty years before we thought of doing it. Early Russian literature was not abstracted in German, English or French, and Pennie took up the Russian language as a hobby.

Another difficulty in making searches is in finding complete libraries. Actually, there is no such thing as a complete library. In New York we are particularly fortunate, and in speaking of literature as distinguished from patents alone, the combined library resources here are better than any in the world. We have our own Chemists' Club Library, our Annex over on Fifth Avenue, the Engineering Societies' Library, Columbia University Library, the Library of the New York Academy of Medicine, the Library of the Stevens Institute of Technology in Hoboken, the Library of the College of Pharmacy, and others.

The important information a searcher has at his command is his knowledge of libraries, where they are, what is in them, and his ability to find and to use what is in them.

In carrying out a search, I work differently from most people. For example, in making a search on some subject up to the year 1930, I do not start with the literature at the beginning, say 1832, in the *Chemisches Zentralblatt* and work up to 1930; I do not start with *Chemical Abstracts* for 1930. Instead, I start with the latest annual index available for the abstract journals. Since the 1935 index of *Chemical Abstracts* is not yet available (February 14th), I would start with that for 1934 and work

backward. I do this because since 1930 some one may have published a review of the subject with a bibliography. By thus working backward one frequently finds a useful bibliography that would not have been found and utilized until the search had been nearly completed. When I get a job, I try to find the best book on the subject, regardless of its date, and then I go thru that book very carefully to see what has been done on the subject. Having gone thru that book thoroly, the next thing is to find the latest book on the subject, even tho this late book may not be so good. By that time, one has an idea in which country there has been the greatest activity on the subject. For example, take the paper on non-shatterable glass which was read at a recent meeting of the New York Chapter of THE AMERICAN INSTITUTE OF CHEMISTS by Mr. J. W. H. Randall. From this paper it is easily determined that the Germans have done virtually nothing in this field. The greatest activity in the laminated glass field has been in England, the United States and in France. Having determined what country has shown the greatest activity in the subject, then get the abstract journals which are published in that country, because those abstract journals will be very likely to publish abstracts on the subject from many out-of-the-way journals.

The next procedure is to make a list of synonyms and key-words, under which to do the searching. The average person would put down "rubber," for example, if he were searching literature on this subject, but he would be less likely to put down "caoutchouc," a word which is still commonly used in Germany and France. It is also necessary to put down the term "India rubber," because many journals in England still index this substance under "India rubber," but not under "rubber." Having a list of key-words and synonyms, the next thing to look for is the trade slang. This is important, for every industry has its pet expressions. For example, the paper-maker calls aluminum sulfate, "alum." Recently, I came across a similar example. This was an article entitled, "The incorporation of aluminum flake in compounding India rubber." Every one I have asked has assumed that "aluminum flake" is aluminum metal, powdered in flake form. As a matter of fact, it actually referred to white silicate of aluminum. In America, we speak of a talking machine as the "victrola." In England they call it a "gramaphone" or even "His Master's Voice." We call the incandescent gas mantle a "Welsbach" mantle. The Germans call it an "Auer" mantle. We call the ordinary, round, hard-shell clam a "clam," but the New Englander speaks of it as a "quahaug." We speak of "radio," while the Englishman calls it a "wireless." There are hundreds of words such as these which one must look up or know.

Again referring to the preliminaries: Do not fail to see if there is a specialized journal in the field at hand. If we are searching the literature of ceramics, we find there are British and American journals on the subject. If there is no specialized journal, we go to *Chemical Abstracts* as an index, but as nothing else. They abstract more articles than other publications, and as a consequence, their abstracts are shorter. If you are looking for abstracts of good quality, go first to the *Journal of the Society of Chemical Industry*, for the British Chemical Abstracts, and then to *Chemisches Zentralblatt*, which publish not so many abstracts, but abstracts which are of excellent quality. In almost all cases of abstracts in *Chemical Abstracts* you have to go back to the original paper to find out what the author has to say.

Having mentioned these, I must tell you about another journal which lists virtually all the available technical literature under many specialized headings, but does not bring abstracts. It is the *Repertorium der technischen Journal Literatur*. If you go thru all the volumes of this you will find more references than in the abstract journals. It is exceedingly valuable, but unfortunately, was killed by the war. Then having made up the list of articles we wish to consult, we may go to the originals.

Other valuable books are Thorpe's *Dictionary of Applied Chemistry*, Ullmann's *Enzyklopaedie der technischen Chemie* (both editions are necessary because in the preparation of the second edition from the first, much material which was old was omitted to keep the size of the second edition down to that of the first), Wagner's *Jahresbericht*, *Chemical Reviews* and Muspratt's *Handbook*. If one is particularly anxious about American literature, go to the *Review of American Chemical Research*, the predecessor of *Chemical Abstracts*, which was first published in the *Massachusetts Institute of Technology Quarterly*, and then in the *Journal of The American Chemical Society*. Then we have the annual reports of progress of the Chemical Society of London, of the Society of Chemical Industry and those by West of the National Research Council. There are also the standard reference books by Beilstein, Gmelin, Abegg, Mellor, Dammer, Ellis, Friend, etc. A word about Mellor. His bibliographies at the ends of the chapters are exceedingly complete, but not discriminating. You have to go thru all the references to find one that gives you what you are seeking. For example, in the chapter on silicon, he may give one hundred references, but it is necessary to look up all of them to find the particular one in which you are interested.

In the petroleum field, we have Engler's monumental work but I must warn you particularly about Volume 3, containing the chemical

material. The references have not been checked; there are many misprints. Then we have Brown and Crawford's *Nitrocellulose Lacquers*, which is quite complete, but unfortunately the references were not always checked. I had occasion to use this and found many errors, which I sent to the authors. As for the collection of monographs by Worden, they are absolutely unreliable, the dates may be wrong, the inventors' names may be wrong, patent numbers may be wrong. It is absolutely necessary to check his data carefully before use. Not long ago, I obtained seventeen references from this book. In three of the patents cited there was absolutely no mention of the subject under which they were indexed.

Having finished our search in our libraries here in New York, it may be necessary to extend the search. First we have the *Union List of Periodicals*, listing some 20,000 periodicals and the libraries containing them, and from that list with its two supplements, it is possible to locate every periodical that contains any truly scientific or technical article. There is a similar British list available, so that if one has to go to the libraries of England or the Continent, it is possible to obtain lists of what is available there. We also have the list of periodicals from which *Chemical Abstracts* publishes abstracts, and the libraries in which they may be found. Almost every large library today has a photostat machine or some arrangement whereby they can have photostats made.

There is no useful periodical that is not available somewhere in this country. Some years ago, in one of the patent suits on petroleum cracking, two people worked for about 1000 hours. One of the men, who had not visited his family in Europe for some years, made arrangements so that he could also go to Paris and Berlin, there to continue his literature search. In the time (several weeks) that he was there he found only one reference in Paris that was not available here.

In using chemical encyclopedias, Thorpe may be more scientific and very useful, altho Ullmann is more up to date and perhaps more thoro. We must not forget that monumental work by Fremy in ten volumes (actually 120 books), *Encyclopedie Chimique*, published in French. It covers practically everything known at the time of its publication. This is one of the books The Chemists' Club Library received from the late Professor Charles F. Chandler.

When we are looking for literature of a certain date, it is again necessary to go back to the idea of the country in which there was the greatest activity in the subject. Several years ago a patent attorney came to me with a metallurgical subject on which he wanted information prior to 1880. The greatest activity in metallurgy for that period was

in France. We went to the French encyclopedias, in eight or ten small volumes, which Professor Chandler had sent us. When we came to one of these French works, published in 1876, we found just what the attorney was looking for.

In doing all this work, we must not lose sight of the idiosyncrasies of the makers of the indexes of these various periodicals. Going back to the example of aluminum and rubber, if you look in *Chemical Abstracts* under aluminum or rubber you will not find it; but if you look under "Rubber; Compounding; Aluminum in" there you find it. There is only one such article in all of *Chemical Abstracts*. Each journal has its own peculiar way of listing, and one soon becomes adjusted to that way of looking for subjects. The average indexer does not use enough cross-references.

There are many people who go to a library and currently make a lot of cards on the subjects that interest them. These sometimes are a waste of time. When later they do need a subject, most of them do not find the thing they are looking for on their cards, because when they prepared their cards they were not interested in the phase now of greatest importance. Printed bibliographies are much more useful than having a lot of cards. People have a tendency to put down what interests them at the time, and leave out something else in the article which may be the important thing they will want a year from now. It is much better to have a complete article photostated than to spend an hour copying it by hand laboriously, with the possibility of making errors in doing the copying. An hour thus spent can be utilized to greater advantage, having a greater monetary value than photostats at 35 cents per sheet. It is a very good idea to build up an individual library of pamphlets, reprints, photostats, extracts, clippings, etc., and above all, of bibliographies.

(During the discussion which followed the talk, the following questions were asked.)

Question: How do you finally compile the work which has been done over a period of time?

Answer: After the title of the search, I give a list of the literature that has been covered. This is followed by the list of key-words under which the search was done. Then I list the references arranged in chronological order by year, and alfabetically under each year by author, then the title and the reference, followed by an abstract, which need not necessarily contain more than twenty words.

It took me five years to convince *Chemical Abstracts* that the year is of more importance than the number of the volume, because the searcher

usually wants to know when the work was done. The number of the volume in which it can be found on the library shelf is of secondary importance.

Another point, which I may have failed to mention before, after English and German, the most important language for the technologist is not French, but Russian. The best work on the chemistry of tobacco has been done for the past 25 years and is still being done today in Russia. It is only occasionally abstracted in French, German or English. The best published work on activated carbon is in Russian. The fields of tobacco, sugar and activated carbon are still being actively pursued in Russia. In Russia, for example, the only workable method for detecting methanol in tobacco smoke was worked out.

Also there is the important matter of misprints. A client found a reference in Thorpe to the *Comptes rendus, Vol. 77*, but our combined efforts failed to find the article in the latter publication. This was before the Club Library had the Collective Indexes of this journal.

Tracing back from the 5th Edition of Thorpe thru its previous editions, thru Watt's Dictionary and finally back to Wagner's *Jahresbericht* in 1868, the correct reference to Volume *44* was found after 4 hours of searching. As a result the gentleman interested won his patent suit.

Question: Should papers be abstracted by an abstractor, or by the author?

Answer: Different methods of abstracting are used by the Society of Chemical Industry and the London Chemical Society, as compared with *Chemical Abstracts*. The latter publication has tried to pick some prominent man and make him "boss of his field," with several other men specializing in the field under him. Thus, altho these men know their subjects thoroly, they are not trained abstractors. The two English journals mentioned, each has about twenty abstractors whose sole business in life is abstracting. The result is that the abstracts in these English journals are worth twice as much as those in *Chemical Abstracts*. It is my opinion that the author should never do his own abstracting.

Question: How thoroly is Russian chemical literature abstracted today?

Answer: Only one branch is well covered—that of the petroleum industry. One man is earning his living doing that by making the results available to others. The other Russian chemical literature is covered rather superficially in German, and to some extent by *Chemical Abstracts*.

Every member get a member

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January Meeting

THE ONE-HUNDRED and twenty-eighth meeting of the Council of THE AMERICAN INSTITUTE OF CHEMISTS was held at The Chemists' Club, 52 East 41st Street, New York, N. Y., on January 16, 1936, at 5:30 P. M.

President M. L. Crossley presided. The following officers and councilors were present: Messrs. H. T. Clarke, M. L. Crossley, H. R. Moody, H. S. Neiman, W. T. Read, F. W. Zons and Miss F. E. Wall. Dr. Max Trumper was present as a representative of the Pennsylvania Chapter. Miss V. F. Kimball was also present.

The minutes of the previous meeting were approved. The Treasurer's report was read and accepted.

The following new members were elected:

FELLOWS

EDWARD R. ALLEN, *Technical Director*, Krebs Pigments Department, E. I. du Pont de Nemours and Company, 256 Vanderpool Street, Newark, N. J.

JOHN F. ANTHES, *Assistant to Chief Chemist*, Brooklyn Union Gas Company, 191 St. James Place, Brooklyn, N. Y.

JOHN H. BELTZ, *Treasurer and Director of Laboratory*, Bell and Beltz, Inc., 3340 N. Broad Street, Philadelphia, Penna.

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HARRY L. FISHER, *Research Chemist*, Development Department, United States Rubber Products, Inc., Passaic, N. J.

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PERCY E. LANDOLT, *Consulting Engineer, Vice-president and Treasurer*, Allied Process Corporation, 405 Lexington Avenue, New York, N. Y.

ROBERT F. LIGHT, Fleischmann Laboratories, 158th Street and Mott Avenue, New York, N. Y.

MAX MELTSENR, *Professor*, College of the City of New York, New York, N. Y.

GEORGE A. PERLEY, *Chief*, Chemical Division, Research Department, Leeds and Northrup Company, Philadelphia, Penna.

WALTER S. RITCHIE, *Chairman*, Department of Chemistry, Massachusetts State College, Amherst, Mass.

LEO ROON, *President*, Roxalin Flexible Lacquer Company, Elizabeth, N. J.

CONRAD F. SCHRIMPE, *Research Chemical Engineer*, Bakelite Corporation, 230 Grove Street, Bloomfield, N. J.

G. B. L. SMITH, *Assistant Professor*, Polytechnic Institute of Brooklyn, Brooklyn, N. Y.

CHARLES A. THOMAS, *President*, Thomas and Hochwalt Laboratories, Dayton, Ohio.

WORTH WADE, *Consulting Chemist*, Sylvania Industrial Corporation, 122 East 42nd Street, New York, N. Y.

ASSOCIATES

E. EVERETT AUER, *Chemist*, Calco Chemical Company, Bound Brook, N. J.

ROBERT C. CONN, *Research Chemist*, Calco Chemical Company, Bound Brook, N. J.

WILLIAM J. MADER, *Organic Chemist*, Calco Chemical Company, Bound Brook, N. J.

MARIO SCALERA, *Research Chemist*, Calco Chemical Company, Bound Brook, N. J.

JUNIORS

MILTON C. KINSTLER, *Surveyor*, Park Department of New York City, Corona Golf House, Queens, N. Y.

CHESTER A. SNELL, *Graduate Fellow*, Polytechnic Institute of Brooklyn, Brooklyn, N. Y.

Upon motion made and seconded, Carl Grothues was raised from Student to Junior.

Upon motion made and seconded, the dates of May ninth and tenth, 1936, were approved for the Annual Meeting to be held in Buffalo, N. Y.

The matter of the student medals for the coming year was referred to the Committee on Professional Education.

The Committee on Insurance reported progress.

Upon motion made and seconded, a committee, consisting of Dr. Read and Dr. Clarke, was appointed to make recommendations with regard to honorary members.

Dr. Breyer reported for the Committee on Unemployment that there is a definite decrease in unemployment.

There being no further business, adjournment was taken.

The Society of Chemical Industry, American Section, held a meeting on February 21st at The Chemists' Club, New York, N. Y. Robert J. Moore, F.A.I.C., acted as chairman. The guest speaker was Mr. E. R. Bridgwater, manager of the Rubber Chemicals Division of E. I. du Pont de Nemours and Company, who spoke on the "Economics of Synthetic Rubber."

Our New Members

EDWARD R. ALLEN, F.A.I.C., received the B.S. degree from the University of Illinois and the Ph.D. degree from Cornell. He has had several articles published. Specializing in pigment and lake colors and dyestuffs for lakes, he is technical director of Krebs Pigments Department, E. I. du Pont de Nemours and Company, Newark, N. J.

JOHN F. ANTHES, F.A.I.C., has the Ch.E. degree from Polytechnic Institute of Brooklyn, where he is a lecturer on gas engineering. He has published several papers dealing with leather analysis or of interest to the gas industry. Formerly with the American Leather Research Laboratory and the British American Chemical Corporation, he is now assistant to chief chemist, Brooklyn Union Gas Company, Brooklyn, N. Y.

E. EVERETT AUER, A.A.I.C., obtained the A.B. and Ch.E. degrees from Columbia. He is chemist with Calco Chemical Company, Bound Brook, N. J.

JOHN H. BELTZ, F.A.I.C., holds the A.B. degree from Ursinus College; has studied at the University of Edinburgh, and holds the M.A. degree from Columbia University. Specializing in analytical chemistry, and water supply and treatment, he is treasurer and director of laboratory of Bell and Beltz, Inc., Philadelphia, Penna.

GEORGE L. CLARK, F.A.I.C., acquired the A.B. degree from DePauw University, and the Ph.D. degree from the University of Chicago. He is the author of one hundred and eighty-five scientific papers and of a book, "Applied X-Rays." His preferred subjects are the application of X-ray and spectroscopic research to industrial problems; and analytical and physical chemistry. He is professor of chemistry at University of Illinois, Urbana, Ill.

ROBERT C. CONN, A.A.I.C., holds the M.S. degree from West Virginia University, and the Ph.D. from New York University. Specializing in organic chemistry, he has written in collaboration with others a paper on aromatic esters. He is research chemist with Calco Chemical Company, Bound Brook, N. J.

HAROLD S. DAVIS, F.A.I.C., has the Ph.D. degree from Harvard. His research work in varied fields provided material for numerous publications and patents. Recipient of Fellowships from Mellon Institute and from the American Petroleum Institute at Massachusetts Institute of Technology, he also has been associated with A. D. Little, and with Vacuum Oil Company. He is now with American Cyanamid Company, Tremley Laboratory, Linden, N. J.

RAYMOND N. EVANS, F.A.I.C., received the B.S. degree from Pennsylvania State College and the Ph.D. from Yale. Specializing in the chemistry of electrical insulation and dielectrics, he has published several papers on chemical tests of insulating oils and on the analysis of combustibles in flue gas. He is assistant research engineer with Brooklyn Edison Company, Brooklyn, N. Y.

HARRY L. FISHER, F.A.I.C., was graduated from Williams College with the A.B. degree; from Columbia University with the A.M. and Ph.D. degrees. Specializing in organic chemistry, particularly the chemistry of rubber, he is the author of a number of articles on these subjects, and also of "Laboratory Manual of Organic Chemistry." He also holds several patents. His position is research chemist with United States Rubber Products, Inc., Passaic, N. J.

CARROLL A. HOCHWALT, F.A.I.C., received the B.Ch.E. and Sc.D. degrees from the University of Dayton. Specializing in polymerization, pyrolysis, paints and varnishes, resins and plastics, paper, petroleum products, cutting oils, wetting agents, salt, spirits and fire extinguishers, he has written several papers on these subjects, and holds more than twenty-five patents. He is vice-president of Thomas and Hochwalt Laboratories, Dayton, Ohio.

MILTON C. KINSTLER, J.A.I.C., received B.S. and Ch.E. degrees from the College of the City of New York. Interested in organic chemistry and chemical engineering, he is employed as surveyor by the Park Department of New York City.

PERCY E. LANDOLT, F.A.I.C., holds the degree of Chemical Engineer from the School of Mines of Columbia University. Especially interested in the Cottrell electrical precipitation process, spray drying, Portland cement, potash recovery, nitrogen fixation and alloy developments, he has published many articles on these subjects. He is consulting engineer, vice-president and treasurer of Allied Process Corporation, New York, N. Y.

ROBERT F. LIGHT, F.A.I.C., received the B.S. and M.S. degrees from the University of Minnesota. Specializing in nutrition, he has published several articles on vitamin research and holds patents on the production of vitamin preparations. He is employed as research chemist by The Fleischmann Laboratories of Standard Brands, Incorporated, New York, N. Y.

WILLIAM J. MADER, A.A.I.C., studied at Greenbrier Military School, has the A.B. degree from Western Reserve University and the M.Sc. from Ohio State University. He is employed as organic chemist by Calco Chemical Company, Bound Brook, N. J.

MAX MELTSNER, F.A.I.C., received the A.B. degree from the College of the City of New York, and the Ph.D. degree from Fordham University. He specializes in solid fuels, leather chemistry, ethanolamines and organic synthetic products. He has obtained patents on the silvering of glass and the degreasing of skins. His present position is assistant professor of chemistry at the College of the City of New York, New York, N. Y.

GEORGE A. PERLEY, F.A.I.C., received the B.S. degree from the University of New Hampshire, and the M.A. degree from Cornell. He specializes in methods of measuring and control in the chemical industry, and has written many articles on these and other tech-

nical subjects. He is chief of the chemical division of the Research Department of Leeds and Northrup Company, Philadelphia, Penna.

WALTER S. RITCHIE, F.A.I.C., holds the B.S. degree from Ohio State University and the Ph.D. from the University of Missouri. Specializing in animal and human nutrition, and food chemistry, he has written a number of articles on these subjects. Formerly assistant professor of agricultural chemistry at the University of Missouri, he is now research professor of chemistry and head of the department of chemistry at Massachusetts State College, Amherst, Mass.

LEO ROON, F.A.I.C., graduated from Columbia University and obtained the M.S. degree from New York University. Specializing in colloidal chemistry, emulsions, and surface coating materials, he has written several articles and holds several patents. He is president of the Roxalin Flexible Lacquer Company, Elizabeth, N. J.

MARIO SCALERA, A.A.I.C., received the Ph.D. degree from Yale University. Specializing in organic chemistry, he is employed as research chemist by Calco Chemical Company, Bound Brook, N. J.

CONRAD F. SCHRIMPE, F.A.I.C., has the degree of Chemical Engineer from the Polytechnic Institute of Brooklyn. Preferring the field of plastics, he is a research chemical engineer with the Bakelite Corporation, Bloomfield, N. J.

G. B. L. SMITH, F.A.I.C., holds the A.B. degree from Colgate, the A.M. degree from Wisconsin and the Ph.D. from Cornell. Specializing in azidodithiocarbamic acid, selenium, monoaryl guanidines, properties of aryl biguanidines, preparation and reduction of nitroguanidine, he is assistant professor of analytical chemistry at Polytechnic Institute of Brooklyn.

CHESTER A. SNELL, J.A.I.C., studied at St. Stephen's College, and obtained the B.S. degree from the Polytechnic Institute of Brooklyn, where he is now a graduate fellow.

CHARLES A. THOMAS, F.A.I.C., obtained the B.A. and Sc.D. degrees from Transylvania College, and the M.S. degree from Massachusetts Institute of Technology. Specializing in petroleum derivatives, plastics, pyrolysis, polymerization, paper, paints and varnishes, salt, fire extinguishing apparatus, spirits, he has published many papers and holds many patents in these fields. He is vice-president of Monsanto Petroleum Chemicals, Inc., and president of Thomas and Hochwalt Laboratories, Inc., Dayton, Ohio.

WORTH WADE, F.A.I.C., received the A.B. degree from Southern Methodist University, and the Ph.D. from New York University. Specializing in photochemistry, inorganic chemistry, history of chemistry and chemical education, he is consulting chemist in charge of patents with the Sylvania Industrial Corporation, New York, N. Y.

Applications for Membership

FELLOWS

HARRY WILLIAM AHLBECK, *Chief Engineer*, Bakelite Corporation, River Road, Bound Brook, N. J.

RALPH S. ANDERSON, *Development and Research Chemist*, Bakelite Corporation, Bound Brook, N. J.

HENRY S. BACAL, *President*, Pioneer Paint and Varnish Co., 438 West Congress Street, Tucson, Arizona.

FRANK MOORE BEEGLE, *Research Chemist*, Congoleum-Nairn, Inc., Marcus Hook, Penna.

GEORGE MOSHER BRAMANN, *Research Chemist*, Niacet Chemicals Corporation, Pine Avenue and 47th Street, Niagara Falls, N. Y.

WESLEY R. GERGES, *Chief Chemical Engineer*, The Barrett Company, Margaret and Bermuda Streets, Philadelphia, Penna.

ROBERT J. GNAEDINGER, *Manager*, Drier Department, The McGean Chemical Company, 1106 Republic Building, Cleveland, Ohio.

JOHN ABNER HANDY, *Manager and Chief Chemist*, Pharmaceutical and Perfumery Department, The Larkin Co., 680 Seneca Street, Buffalo, N. Y.

HARRY KLINE, *Research and Development Chemist*, Bakelite Corporation, River Road, Bound Brook, N. J.

WILLIAM KRUMBHAAR, *Vice-president in Charge of Technical Development*, Beck Koller and Company, Inc., 601 Woodward Heights Blvd., Ferndale Station, Detroit, Mich.

PHILIP M. DE LEEUW, *Chemist*, Nubian Paint and Varnish Company, 1856 N. LeClaire Avenue, Chicago, Ill.

FRANCIS J. LICATA, *Chief Chemist*, Metasap Chemical Company, Harrison, N. J.

CHARLES G. MOORE, Pure Calcium Products Company, P. O. Box 407, Painesville, Ohio.

WHITMAN RICE, *Chemist, Sales Manager, Technical Advisor*, The National Sugar Refining Company of New Jersey, 129 Front Street, New York, N. Y.

ERNEST SCHELLER, *Director of Plant Research*, Reynolds Metals Company, 30th and Grand Avenues, Louisville, Ky.

ANDREW J. SNYDER, *Research Chemist*, Kentucky Color and Chemical Company, 34th Street South of Bank Street, Louisville, Ky.

LEROY V. STRASBURGER, *Partner*, Strasburger and Siegel, 15 S. Gay Street, Baltimore, Md.

RALPH NEWTON TRAXLER, *in Charge of Research*, The Barber Asphalt Company, Maurer, N. J.

JAMES GARRETT VAIL, *Vice-president and Chemical Director*, Philadelphia Quartz Company, Philadelphia, Penna.

THOMAS J. WALSH, *Research and Plant Chemist*, Baker and Company, Inc., 149 Murray Street, Newark, N. J.

ALEXANDER HOLLAND WRIGHT, *Professor of Chemistry*, Washington and Jefferson College, Washington, Penna.

JOSEPH H. YOUNG, *President*, Paramount Chemical Company, 126 Maiden Lane, New York, N. Y.

ASSOCIATES

ALBERT IRVING ARNOFF, *President and Treasurer*, Massachusetts By-products Company, 1 Jackson Street, Hyde Park, Mass.

MAX M. LUCHINS, *Specification Engineer*, Department of Purchase, Specification Division, 183 Varick Street, New York, N. Y.

CLINTON W. MACMULLEN, *Research Chemist*, Röhm and Haas Company, Inc., 222 West Washington Square, Philadelphia, Penna.

STUDENT

ISRAEL J. ELINSON, *Student*, College of the City of New York, New York, N. Y.

NEWS

George Jerzykowicz, A.A.I.C., has accepted a position as research chemist for the Pennsylvania Sugar Company, Philadelphia, Penna.

Professor R. W. Wood, of the Department of Physics, The Johns Hopkins University, spoke on "Some New Effects Obtained with High Explosives," at a meeting of the New York University Chapter of Sigma Xi held February 21st.

Norman A. Shepard, F.A.I.C., has been appointed a director of technical service of American Cyanamid Company, 30 Rockefeller Plaza, New York N. Y. He will be located in New York City for the next few months and will then be transferred to the new Laboratory at Stamford, Connecticut.

Albert L. Hall, F.A.I.C., has been appointed a reporter by the Niagara Chapter to contribute news items from that Chapter to THE CHEMIST.

The Association of Consulting Chemists and Chemical Engineers, Inc., met February sixth at the Electrical Testing Laboratories, 80th Street and East End Avenue, New York, N. Y. Following the dinner and entertainment program, Frank G. Breyer, F.A.I.C., spoke on the professional status of the consultant and stressed the important part which consultants play in maintaining and elevating professional standards.

The American Chemical Society announces that the William H. Nichols Medal for 1936 will be awarded March 6th to William Mansfield Clark, De Lamar Professor of Chemistry, Johns Hopkins University, at a dinner meeting to be held in the Hotel Pennsylvania, New York, N. Y. The award is in recognition of Dr. Clark's work on hydrogen-ion concentration and oxidation and reduction equilibria.

Dr. Wilbert J. Huff, of the engineering faculty of Johns Hopkins University, has been appointed Chief Chemist of the Explosives Division of the Bureau of Mines, Department of the Interior. Dr. Huff was a member of this Division, in charge of chemical work at the Pittsburgh Station after the World War, and there carried on a number of researches, one of which, on the corrosion of firearms, led to the wide-spread introduction of non-corrosive ammunition. Dr. Huff will direct research by the Bureau of Mines on the ignition and propagation of gaseous explosions, inflammable limits of gases and vapors, and other problems related to explosives.

BOOKS

PHYSICAL AND CHEMICAL EXAMINATION OF PAINTS, VARNISHES, LACQUERS AND COLORS. 7th Edition. HENRY A. GARDNER, *Institute of Paint and Varnish Research.* 1935.

THE new edition of this book, which has been of considerable assistance to all workers in this field, is eminently more valuable than its predecessors.

The chapters devoted to physical testing, while unusually complete, are merely a compilation of the various methods and apparatus that have been described or proposed by various workers in this field.

The usefulness of the book would have been greatly increased if it also contained comparative critical evaluations of the many methods detailed.

The section comprising data on the physical and chemical characteristics of various commercial materials used in the paint, varnish and lacquer industries, representing as it does a cross section of products available in the market, is probably the most valuable feature of the book and should prove a real inducement to all in this field to have a copy in their libraries. F. K.

Forgotten Dues

The Institute's fiscal year is nearing its close, and in preparing the account books it is noticed that not all dues for the current year are paid.

The Institute has elected more members during this season—and the fiscal year is not yet completed—than in any past year of its history, and its membership roster is the largest it has ever been; thus indicating that its importance is being more appreciated, and that chemists are beginning to understand the necessity of an organization devoted to their individual interests.

Members who may have overlooked previous notices are urged to send their dues to the Secretary's office by March 31st so that they may be credited to the current year's income, thus keeping our budget in order.

Chemists Abroad

By James N. Taylor, F.A.I.C.

DR. M. L. DAVIES, President of the Canadian Institute of Chemistry, addressed the annual dinner-meeting of the Central and Western Ontario Branch at Toronto. Representatives were present from Guelph, Hamilton and other Ontario points and combined with the large local attendance to make this the largest Sectional meeting yet convened under Institute auspices.—*Canadian Chemistry and Metallurgy*, Toronto.

DR. J. J. FOX, O.B.E., D.SC., F.I.C., Deputy Government Chemist, has been appointed by the Lords Commissioners of the Treasury to the post of Government Chemist, with effect from April 17, 1936, on the retirement of Sir Robert Robertson.—*Chemical Trade Journal*, London.

DR. F. W. ATACK in discussing "The Training of Chemists" (*Canadian Chemistry and Metallurgy*, Toronto) recently stated that "Chemical knowledge is not the most important measure of a man's usefulness in a manufacturing plant. Ability to write reports, to talk intelligently with executives, to check purchasing departments, is essential." Most chemists, he found, were too diffident, and failed to make their views acceptable to executives. Accuracy, tidiness, satisfactory record-keeping, were also important. Mr. Atack thought that "teachers place too much emphasis on memory work, thereby burdening the brain with data that could be secured in any good library."

OPPORTUNITIES for American professional men in India are extremely limited because of the fact that there are highly educated Indians engaged in the learned professions whose scale of remuneration and standard of living are too much below American standards to admit of competition. Furthermore, among foreigners, British professional men, because of their long residence in the country and knowledge of the native languages, dominate all the professions. It should be emphasized, however, that the educated classes of Indians are rapidly gaining in their domination of openings in the professional field.—*Special Circular No. 351*, Division of Regional Information, Department of Commerce, Washington, D. C.

A PROFESSION is a calling, not purely commercial, in which one professes to have acquired some special knowledge, used by way of instructing, guiding or advising others, or serving them in some art.—*Australasian Journal of Pharmacy*, Melbourne.

DO THE "TOPPERS" in chemistry err on the generous side toward their lowly helpers in the laboratory? *Canadian Chemistry and Metallurgy*, Toronto, speaking editorially thinks not. "Viewing the business of assisting science workers to perform laboratory duties," states the editorial, "it is probably a fair enough statement to say that most of the bright lads employed are grossly underpaid, considering the comparative responsibility and value of the work they do . . . . The top ranks in science are much better able than formerly to take care of themselves. In their younger days, as a class, they were very vocal about their own economic injustices and should have longer memories and fairer minds."

ACCORDING to "Reichsstellennachweis für Chemiker und Verwandte Berufe," there were in Germany on April 30, 1935, 1,100 chemists registered without work against 1,300 on December 31, 1933. The "Verein Deutscher Chemiker" estimates the total number of occupied chemists to be: in chemical industry, 4,900; other branches of industry, 4,400; in public laboratories, 350; in teaching and administration, 1,300 and abroad, 450; in all, 11,400. However, the outlook is hardly favorable for German chemists.—*Chimie et Industrie*, Paris.

AN ARTICLE in the November, 1935, issue of *The Industrial Chemist* (London), entitled "Works Visits—An Aid to the Training of a Chemical Engineer," calls to mind those halcyon days when such visits were so popular at George Washington University.

Our first visit of all was made to Heurick's brewery in Foggy Bottom and this expedition was so eminently successful that Professor Munroe diplomatically suggested we follow it up with one not associated with hops, etc. So the next week found us inspecting the sulphuric acid plant in Alexandria. Other works visits followed—gas, glass, fertilizer and so on; and notably one to the steel and coke-oven plant at Sparrow's Point. These industrial visits became important extra-curricular activities, enjoyable because of their "atelier" atmosphere and instructive because they so admirably supplemented the functions of the laboratory and class room.

The utility of works visits in the chemist's scholastic training and their effectiveness in broadening the student's outlook are commented upon in the article mentioned above and quoted in part below:

"The progress and continuity of a profession can be assured only by the exhibition to its recruits of the successful work of its present members. In the case of chemical engineers, this can be done only by means of works visits.

"The time available for the average student for this purpose is strictly limited, and careful use must be made of such time as is not occupied by lectures and experimental work. . . . . A connected and progressive series of works visits, occupying perhaps a week or ten days, made from some center of the country's heavy industries, is of more value than spasmodic inspections of local factories. The arrangements for such a series can usually be made by some well-disposed member of, say, the Institution of Chemical Engineers, who has a works in the district, but it must be emphasized that a very great privilege is being granted, which should be valued accordingly.

"It must be clearly understood that it is not the object of works visits to allow the student of chemical engineering to acquire that somewhat vague but very necessary qualification of 'works experience.' Rather are they intended to 'broaden his outlook' on industry and the manufacturing arts in general. This idea is admirably expressed by Mr. R. B. Pilcher, in his monograph, 'The Profession of Chemistry,' which book, it may be added, should find a place in the library of chemical engineers as well as of chemists.

"This broadening of outlook, a term which may be alternatively expressed as knowing how the other man does his job, or perhaps even more adequately as the realization of how much interest he shows in it, comes best to a beginner by observation. The foundations of a successful relationship with workmen, a fact which has often meant the success or failure of a process, may be laid by noting this relationship during a works visit.

"The good-will which it is hoped exists between the teaching institutions and industrialists must be maintained. If the

business section of the community can overlook for a while the slight touch of pedantry with which the academic technician is often tainted, and if the latter will consider more fully the economic aspects of each piece of work, then there is no doubt of the continuing success of the relationship between them, with increasing benefits to all the parties concerned—the student, his teacher and his future employers. The means to do this are to be found primarily in works visits."

Du Pont Fellowships

E. I. DU PONT DE NEMOURS COMPANY recently announced that four post-doctorate fellowships in organic chemistry at $2,000.00 each, plus an additional $1,000.00 to cover the cost of extraordinary equipment, and twelve postgraduate fellowships at $750.00 each, are being established in twelve leading universities and colleges for the academic year 1936–1937.

"An increasing demand for research chemists, with a definite shortage today in that type of scientific workers," according to the announcement, inspired these awards. "As business conditions have improved, industrial research has been resumed with renewed interest with the result that there is now keen competition for men of outstanding ability, while the supply is becoming inadequate for the demand. Consequently, it is felt by the du Pont Company that the resumption of its postgraduate fellowship plan may have the result of increasing to a certain degree the number of trained research men available.

"The objective of the post-doctorate fellowships is to provide trained assistants for a few of the younger professors of organic research to enable them to attack the more difficult type of problems, and to develop men who will be better qualified in research to continue their efforts in the academic field. The postgraduate fellowships, on the other hand, assist promising young men to obtain an education along the lines required by the chemical industry."

The awards have no restrictions other than that the work done under them shall be in the field of chemistry or chemical engineering, but the appointment of the fellowship must be approved by a member of the fellowship committee of the du Pont Company, after reviewing the qualifications of the appointee and the recommendation of the department of chemistry.

The twelve universities selected are: For chemistry—University of Chicago, Cornell, Harvard, Johns Hopkins, Ohio State, Princeton, Yale, Illinois, Minnesota, Wisconsin. For chemistry or chemical engineering—University of Michigan and Massachusetts Institute of Technology.

Gas Smell

QUESTION—Gas leaked from my refrigerator and permeated everything. I have moved, but still smell this terrible gas. What will take it out of furniture, rugs, clothing and everything else? M. W. T., Bronxville.

ANSWER—Chlorine should take it out. Put a spoonful of manganese dioxide in a saucer and pour on a little hydrochloric acid; chlorine gas will be given off. The gas will quickly disappear; it is not unhealthful; chlorine is frequently recommended for the cure of colds.—ROGER B. WHITMAN, "First Aid for the Ailing House," *The New York Sun*, February 7, 1936.

Vitamins

Reports of the discovery of a new vitamin, H, have brought conflicting claims from most of the local studios. Metro-Universal claims that it featured H in "I Am a Fugitive from the Covered Wagon." Fox-Paramount insists that it first released H with Gloria Swanson in an early Mack Sennett comedy. Warner Brothers-Goldwyn-Mayer points with pride to the fact that there was an "h" in its recent super-smash hit, "Magnificent Obsesshion," even though it was only lower case and not always pronounced as spelled. Meanwhile, it is understood that RKO-UFA is trying to sign the new vitamin for a series of epoch-making trailers.—F. P. A. "The Conning Tower," *New York Herald Tribune*, February 10, 1936.

The name "India Rubber" was given to this useful material by Joseph Priestley who was the first to note its usefulness as an eraser. The "India" he added to denote its place of origin, the West Indies being meant.

Supertemperatures

If it were possible to produce temperatures of 10,000° or 20,000° we could revolutionize all industry, we could make steel direct from iron ore, and the cost of production in every industry where high temperature is a factor would be cut in half or down to a quarter its present cost. I have succeeded in a method of producing supertemperatures, temperatures way above any heretofore obtained even by the electric arc and it is so simple, I wonder it has never been thought of before. But this is the way of the world, the simple things, the things right before our very eyes are the things we miss. It is a purely psychological phenomena.

Poe has written a very pretty story around this fact. Poe was a great writer and a great thinker. I liked his story of the Gold Bug best of any.

It has been proved a good many times that there is always a critical temperature above which every degree of heat counts tremendously in lowering the cost of production. Take for example the iron industry. If we could get a temperature of 10,000° or 11,000° we could cut down the cost of making pig iron at least $5.00 a ton. This would cut down the cost of everything in daily

life. Steel would be so cheap that the steel corporations would have to go out of business. Everybody could own a car and the mead of human happiness, in consequence, would be greatly increased.

If every chemist only used his imagination and took some of the simplest laws and forgot that the men who made those laws have been dead for centuries and that he could make up laws of his own just as well, we would have the industries so highly developed that where 1,000 men are now necessary only 100 could do the work and the hours of labor would be shortened and no one would need to work more than half an hour a day.

One of the oldest laws in chemistry is Boyle's Law and yet it seems to be one that is the least studied; but it is as simple as A B C. I marvel at my own ability to use these antiquated laws to the regeneration of our gigantic industries. The whole business of obtaining temperatures of almost any degree, 1,000° higher than any attainable, is simply by using Boyle's Law. By compressing the gases of combustion of any furnace, these gases can be increased in temperature at will. If we take any furnace and take the gases of combustion which have a temperature of say 2,300° and compress them, we can increase their temperature up to 10,000° or 20,000° as we please.

I have found great difficulty in convincing the giants of industry that they could double, triple and quadruple their outputs by installing my method of obtaining supertemperatures.

It might take about $1,000,000.00 to try out my process and I would gladly communicate with anyone who is anxious to make his fortune quickly.

I also have some ideas on "safety-first."—A. NAGELVOORT in *Journal of Ingenuous or Almost Chemistry.*

A German chemist, called Knoring,
From a bottle gently pouring
  Little drops of brilliant sheen,
  Drops of nitroglycerin.
Bunsen burner standing by,
Did not catch poor Knoring's eye;
  A flash, a roar, an awful crash,
  It shattered the window pane and sash.
From the cracks within the flooring
They extract what's left of Knoring.

M. L.

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Special News Flash to THE CHEMIST from its Ethiopian Correspondent.

The colorful wedding of Miss Molly Cule and Mr. A. Tom took place today. The Rev. Highly Siliceous acted as the Catalyst.